Digital tank level display
- Type DTA 9648 -

FEATURES

- **SUITABLE FOR MEASURING THE CONTENT OF TANKS, IN PARTICULAR PRESSURISED TANKS, BY DETERMINING A PRESSURE DIFFERENCE**
- **2 INPUTS 0/4...20 MA OR 0/2...10 V DC FOR PRESSURE TRANSMITTER**
- **1 INPUT FOR AUTOMATIC FILLING LEVEL CORRECTION**
- **VOLUME OR MASS DISPLAY (WEIGHT)**
- **6 STANDARD AS WELL AS ANY SPECIAL TANK SHAPES SELECTABLE**
- **MAX. 4 ALARM OUTPUTS, CHANGE-OVER RELAY OR TRANSISTOR**
- **GALVANICALLY ISOLATED ANALOGUE OUTPUTS, 0/4...20 MA, 0/2...10 V DC (LOAD-DEPENDENT)**
- **PROTECTION TYPE IN FRONT IP 65**
- **DISPLAY SCOPE DIGITS 0...999999**
- **ADJUSTMENT IN PRESSURE-FREE STATE POSSIBLE**

DESCRIPTION

The **DTA 9648** tank content display was designed for all applications in the tank content measurement area and is, in particular, used for volume measurements with liquid media in tanks of various shapes. A connection for a pressure transmitter with an analogue output 0/4...20 mA or 0/2...10 V DC is available, as well as a 2nd measuring input for filling level measurements using differential pressure.

The volume calculations are based on measuring the hydrostatic pressure when the density of the medium is known. The filling level is calculated and displayed by using the tank geometry - the formuli for the most common tank shapes are internally stored and can be called up - or a sampling point table than is created by volumetric calibration.

The device provides the option of connecting an additional level sensor. When a specific level has been reached, the display is corrected to the value that corresponds to the filling height in the tank in which the level sensor is installed. Programming is performed at the membrane keyboard in front. The alarm outputs can be programmed as min. or max. functions. The switching states are indicated by LEDs. When the digital filter is activated, the mean of 16 measuring values is continuously calculated and displayed. A galvanically isolated analogue signal in the range 0...20 mA / 0...10 V DC or 4...20 mA / 2...10 V DC that is proportional to the tank content, is provided. Switching from a current to a voltage signal is load-dependent (> 500 Ω to voltage).

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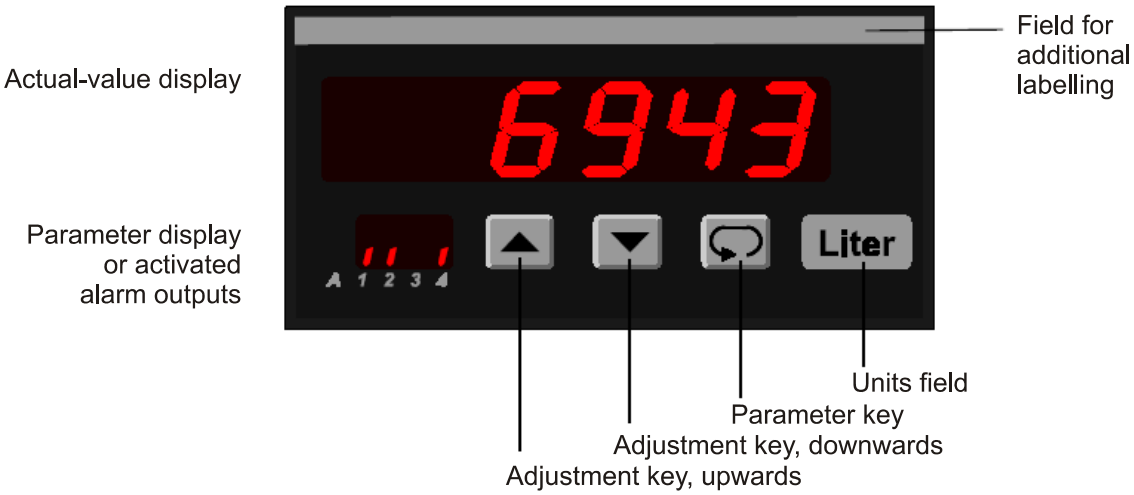
TECHNICAL DATA

Design data	
Housing	Control panel installation housing DIN 96 x 48 mm, material PA6-GF; UL94V-0
Dimensions	Front 96 x 48 mm, installation depth 100 mm
Connection	Spring-loaded clamps, 2 mm² single wire, 1 mm² fine wire, AWG 14
Type of protection	Front IP 65, clamps IP 20, contact protected according to BGV A2
Weight	max. 390 g
Display	
Display	LED red; 14.2 mm
Display scope	Digits 999999 with suppression of leading zeroes
Additional display	LED 2 digits, red, 7 mm (display for parameter and switching state)
Electrical connection	
Auxiliary voltage	230 V AC +/- 10 %; 115 V AC +/- 10 %; 24 V AC +/- 10 %; 24 V DC +/- 15 %
Power input	max. 3.5 VA, with anaolg output 5 VA
Operation temperature	-10...+ 55 °C
Rated voltage	250 V AC according to VDE 0110 between input/output/auxiliary voltage, Degree of Pollution 2, Overvoltage Category III
Test voltage	4 KV between input/output/auxiliary voltage
CE conformity	Complies with the standards EN 55022, EN 60555, IEC 10004-3/4/5/11/13
Inputs	
Current inputs	0/4...20 mA; Ri = 10 Ω with overload 2 times; 4 times for max. 5 s
Voltage inputs	0/2...10 V DC; Ri = 100 KΩ with overload max. 100 V
Basic accuracy	< 0,1 % +/- 2 digits
Temperature coefficient	0.004 % / K
Transmitter supply	Uo approx. 24 V, Ri approx. 150 Ω, max. 50 mA (25 mA at 4 relay outputs)
Outputs	
Relay	Change-over contact < 250 V AC < 250 VA < 2A, < 300 V DC < 50 W < 2 A
Transistor	max. 35 V AC / DC / 100 mA, with electonic current limiting
Analog output	0/4...20 mA working resistance </= 500 Ω; 0/2...10 V working resistance > 500 Ω, galvanic isolated, Output switches automatically (load-dependent)
Accuracy	0.1%; TK 0.01 %/K

OPERATING / DISPLAY ELEMENTS



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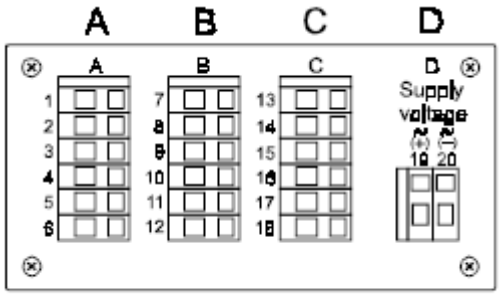
CONNECTION DIAGRAMS

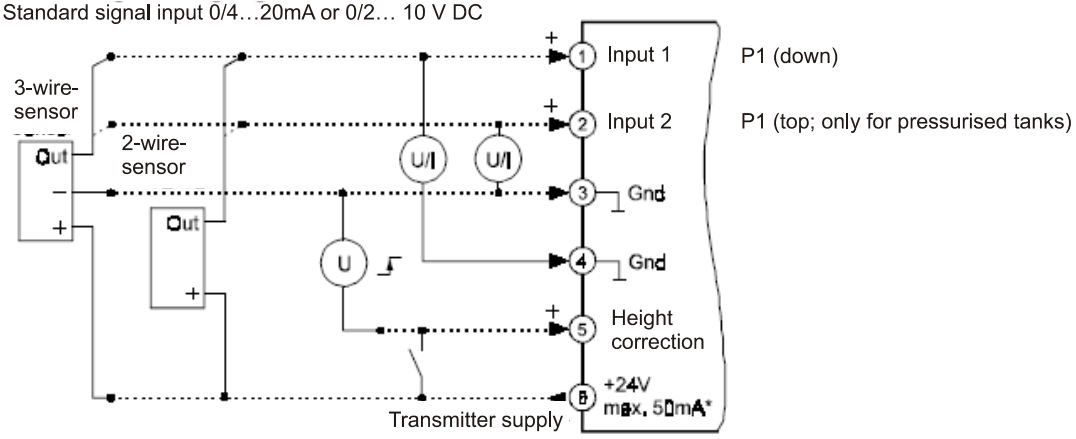
a) Arrangement of terminal strips



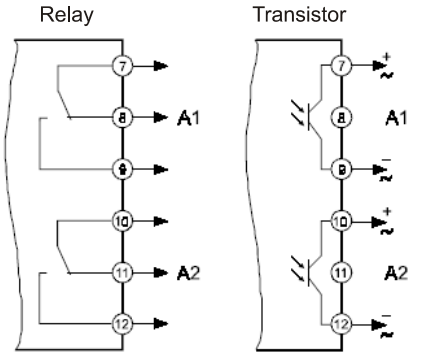
Arrangement of the terminal strips

b) Terminal allocation for terminal strips

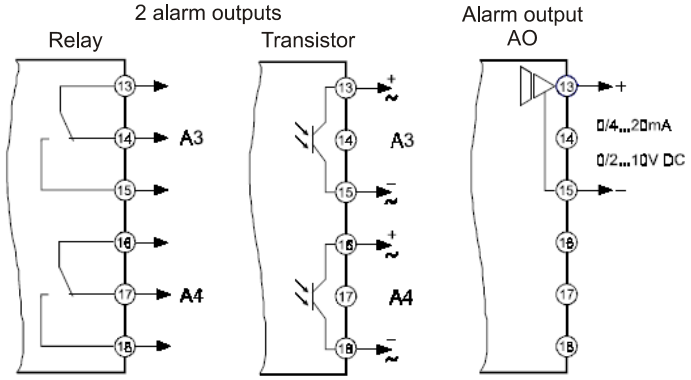
Terminal strip A
Standard signal input 0/4…20mA or 0/2… 10 V DC



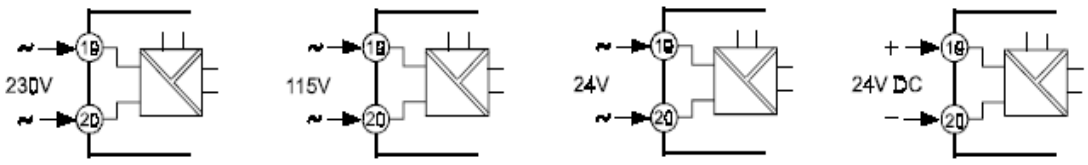
Terminal strip B (depending on version)
2 alarm outputs



Terminal strip C (depending on version)
2 alarm outputs



Terminal strip B (depending on version)



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ORDER INFORMATION

Terminal strip A

1	Inputs 0/4...20 mA, 1 digital input, integrated transmitter supply 24 V DC, max. 50 mA
2	As above, but 0/2...10 V DC

Terminal strip B

00	Not equipped
2R	2 alarm outputs relay
2T	2 alarm outputs transistor

Terminal strip C

00	Not equipped
2R	2 alarm outputs relay
2T	2 alarm outputs transistor
AO	Analog output 0/4...20 mA, 0/2...10 V DC

Terminal strip D – Auxiliary current

0	230 V	50/60 Hz	+/- 10 %
1	115 V	50/60 Hz	+/- 10 %
4	24 V	50/60 Hz	+/- 10 %
5	24 V	DC	+/- 15 %

Options

00	without option

Unit

XXX	Appears as an imprint in the units field

Additional text

XXX	Appears as an imprint in the field for additional labelling, Writing area H x W = 3 x 90 mm

DTA9648							

Accessory from the supply range for pressure transmitters

Example: Transmitter PZM / PZM 100 / PZM 101

Our equipment is currently being developed, therefore we reserve the right to make amendments.

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